

REMARKS

This is intended as a full and complete response to the Office Action dated August 31, 2006, having a shortened statutory period for response set to expire on November 30, 2006. In the specification, paragraphs [0018], [0030], [0036] and [0037] have been amended to correct minor editorial problems. In amended Figure 3, Y_2 has been added between lines 350 and 360. Claims 1, 12, 13, 17 and 23 have been amended to more clearly recite various aspects of the invention. Applicants believe no new matter has been introduced by the amendments presented herein. The amendments have been made in a good faith effort to advance prosecution on the merits. Please reconsider the claims pending in the application for reasons discussed below.

In a telephone interview on November 17, 2006, the Examiner indicated that the amendments made to claims 1, 12, 13, 17 and 23 overcome the rejection under 35 U.S.C §101. Applicants appreciate the Examiner's courtesy for scheduling and conducting the interview.

The Examiner objects to Figure 1 because the words do not appear on a horizontal, left-to-right fashion when the page is turned so that the top becomes the right side. Applicant respectfully traverses this objection. When Figure 1 is turned to the right so that the top becomes the right side, the words on the bottom of the page are displayed in a left-to-right fashion. Accordingly, Applicant respectfully requests that the objection be withdrawn.

The Examiner objects to Figure 3 for lacking clarity. In particular, the Examiner takes the position that Figure 3 lacks written descriptions for the various depths shown. Further, it is unclear to the Examiner as to which horizontal line represents the water surface and which horizontal lines represent rock interfaces, as opposed to depths at which the source and receivers reside. As explained throughout the specification, the horizontal lines do not represent various depths, water surface or rock interfaces. Figure 3 illustrates a top view of trace (S, R) on target subsurface line (SSL) 310 for which the surface multiples are to be predicted. As such, line 310 represents a target SSL. Line 320 represents an input SSL. See e.g., paragraph [0023]. Line 340 represents a locations-for-X line on which one or more potential downward reflection points are disposed. Line 360 represents yet another locations-for-X line on which one or more potential downward reflection points are disposed. See e.g., paragraphs [0024], [0030] and Figure 2. Line 350

represents yet another input SSL. See e.g., paragraph [0030]. Accordingly, Applicant respectfully requests that the objection be withdrawn.

The Examiner objects to Figure 3 because the marker Y_2 should have been drawn between lines 350 and 360. Applicant is grateful to the Examiner for pointing this out. Figure 3 has been amended to add the marker Y_2 between lines 350 and 360. Accordingly, Applicant respectfully requests that the objection be withdrawn.

The Examiner objects to the abstract of the disclosure for containing more than 150 words. The abstract of the disclosure has been amended to contain less than 150 words. Accordingly, Applicant respectfully requests that the objection be withdrawn.

The Examiner objects to grammatical errors in paragraph [0030], [0036] and [0037]. Applicant is grateful to the Examiner for pointing this out. Paragraphs [0030], [0036] and [0037] have been amended. Accordingly, Applicant respectfully requests that the objection be withdrawn.

The Examiner also states that the information on page 9, lines 12-14, which corresponds to paragraph [0024], appears to be inconsistent with the information on paragraph [0030] and Figure 3. Paragraph [0018] has been amended to clarify that Figure 3 illustrates *a top view of* a specific trace on the target SSL 310 for which the surface multiples are to be predicted. The specific trace has a source at S and a receiver at R. See e.g., paragraph [0023]. A point X on a locations-for-X line 340 corresponds to a potential downward reflection point for the surface multiples of trace (S, R). See e.g., paragraph [0024]. Locations-for-X line 340 may contain a plurality of potential downward reflection points X's for the surface multiples of trace (S, R). See e.g., paragraph [0029] and Figure 2. Like locations-for-X line 340, a locations-for-X line 360 may also contain a plurality of potential downward reflection points X's for the surface multiples of trace (S, R). Locations-for-X line 340 is separated from locations-for-X line 360 by $2Y + 2Y_2$ in a crossline direction, where crossline is generally known as a direction perpendicular to the direction of the boat, which may commonly be referred to as the inline direction. See e.g., paragraph [0030] and Figure 3. In view of the amendment and the above explanation, Applicant respectfully requests that the objection be withdrawn.

Claims 1 and 17 are objected to because step (c) in the claims lack clarity. Claims 1 and 17 have been amended to provide more clarity to step (c). Accordingly, Applicant requests that the objection be withdrawn.

Claims 1 and 17 are objected to because step (e) in the claims lack clarity. Step (e) in claims 1 and 17 has been deleted and steps (c), (d) and (f) have been amended to more clearly certain aspects of the invention. Accordingly, Applicant requests that the objection be withdrawn.

Claims 9, 13, 15 and 18 are objected to because it is not clear to the Examiner if "plurality of subsurface lines" refers to target subsurface lines or input subsurface lines. Applicant respectfully traverses this objection. The target subsurface lines and the input subsurface lines may be selected from the plurality of subsurface lines. Therefore, the plurality of subsurface lines may include both target subsurface lines and input subsurface lines. Claims 9, 13, 15 and 18 are directed to preconditioning the record of seismic data to subsurface lines prior to selecting target subsurface lines and input subsurface lines. Accordingly, Applicant respectfully requests that the objection be withdrawn.

Claims 12 and 23 are objected to because the limitation "multiple contribution gather" lacks antecedent basis. Claims 12 and 23 have been amended. Accordingly, Applicant respectfully requests that the objection be withdrawn.

Claims 1-23 stand rejected under 35 U.S.C §101 for reciting non-statutory subject matter. More specifically, the Examiner takes the position that claims 1-23 do not produce tangible results. The Examiner states that the practical application of the claimed invention cannot be realized until the information determined is conveyed to the user and that for the result to be tangible, it would need to be output to a user or displayed to a user or stored for later use. Claims 1, 12, 17 and 23 have been amended to overcome the rejection under §101. Accordingly, Applicant respectfully requests that the objection be withdrawn.

In conclusion, the references cited by the Examiner, neither alone nor in combination, teach, show, or suggest the claimed invention. Having addressed all issues set out in the office action, Applicant respectfully submits that the claims are in condition for allowance and respectfully request that the claims be allowed.

The prior art made of record is noted. However, it is believed that the secondary references are no more pertinent to the Applicant's disclosure than the primary references cited in the office action. Therefore, it is believed that a detailed discussion of the secondary references is not deemed necessary for a full and complete response to this office action. Accordingly, allowance of the claims is respectfully requested.

Respectfully submitted,

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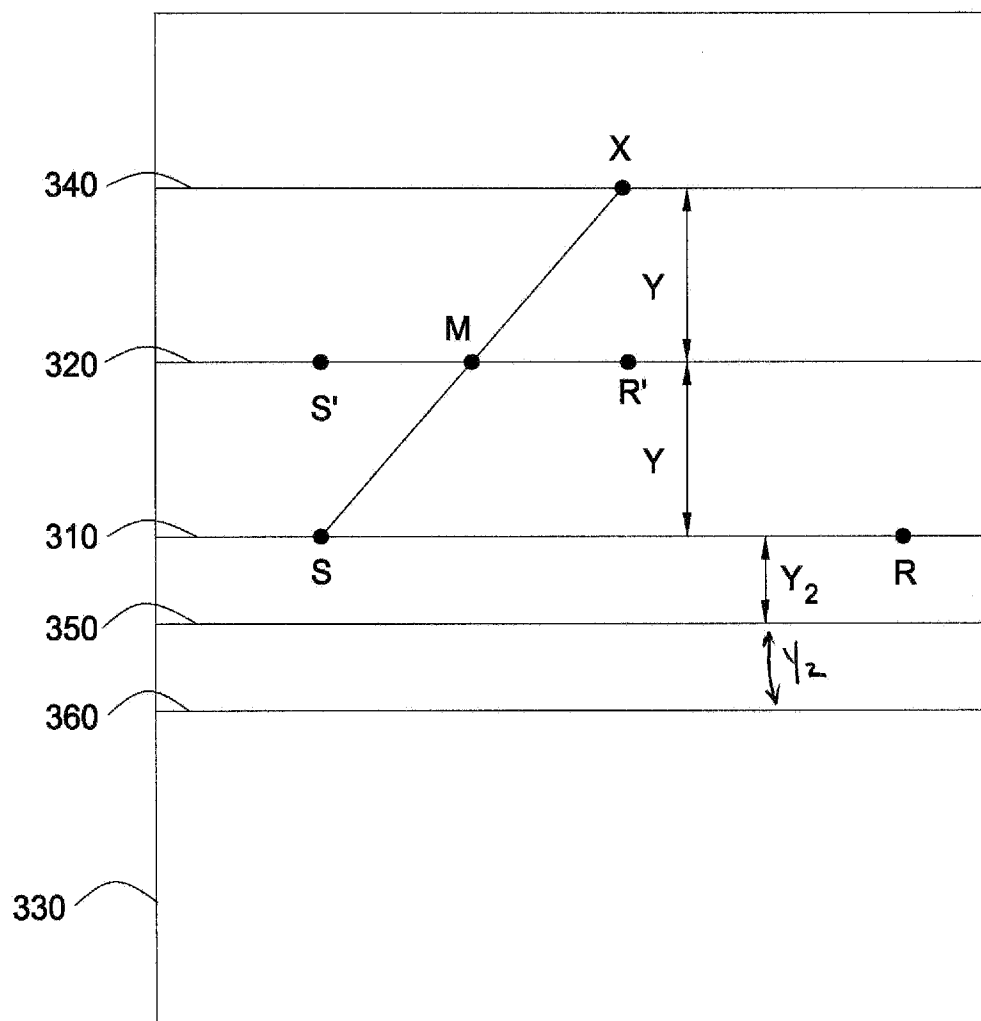


FIG. 3